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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,477	10/22/2003	Wayne T. Mansell	I-24390	5033
4859	7590	03/24/2006	EXAMINER	
MACMILLAN SOBANSKI & TODD, LLC ONE MARITIME PLAZA FOURTH FLOOR 720 WATER STREET TOLEDO, OH 43604-1619			TRAN, DALENA	
		ART UNIT	PAPER NUMBER	
		3661		

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/691,477	MANSELL ET AL.
Examiner	Art Unit	
Dalena Tran	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Staty

1)  Responsive to communication(s) filed on 03 January 2006.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-38 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) 16-20 is/are allowed.

6)  Claim(s) 1-8,12-15,21-38 is/are rejected.

7)  Claim(s) 9-11 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_

5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_

**DETAILED ACTION**

**Notice to Applicant(s)**

1. This office action is responsive to the amendment filed on 1/3/06. As per request, claim 14 has been amended. Claims 1-38 are pending.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 6-7, and 12-13, are rejected under 35 U.S.C.103(a) as being unpatentable over Littlejohn et al. (5,033,000) in view of Ulrich et al. (6,807,465).

As per claim 1, Littlejohn et al. disclose an electronic control system for a personal mobility vehicle, the system comprising: at least one input, and at least one output (see the abstract; columns 1-2, lines 56-23; and column 3, lines 59-65). Littlejohn et al. do not explicitly disclose the input being adapted to be programmably mapped to the output according to a user's preference. However, Littlejohn et al. disclose **control signals from an input**, such as a joystick, **are modified by the algorithm in accordance with the prescription for a particular user** (column 1, lines 63-65); **the control signals from joystick are provided to a command module 20** (column 2, lines 46-48); **command module 20** coupled to a pair of serial links 42 to **a control module 44** (column 3, lines 37-39); **control module providing digital outputs** (column 3, lines 61-62). Also, Littlejohn et al. disclose in column 10, lines 3-5, a second

controller for applying a predetermined algorithm to modified drive signals to produce power signals to drive motor, this implies output signals.

Therefore, it would have been obvious to one of ordinary skill in the art that Littlejohn et al. implicitly disclose the input being adapted to be programmably mapped to the output according to a user's preference because the control module providing digital outputs signal in response to the control signal from inputs, and the control signals are modified by the algorithm in accordance with the prescription for a particular user.

In addition, to modify for the teach of Littlejohn et al. about the input being adapted to be programmably mapped to the output according to a user's preference. Ulrich et al. disclose the interface 80 is provided with a switch 90 that allows the user select between the various control maps (column 5, lines 1-3), it would have obvious to one of ordinary skill in the art that "the user select between the various control maps" implies input; and once the user selects the desired control map, the CPU is ready to compute the desired system output (column 5, lines 12-14), it would have obvious that "the desired system output" implies output corresponding to the input selected by the user. Also, Ulrich et al. disclose the control system is programmed with at least one control map defining a desired dynamic of the vehicle (column 2, lines 3-5), and the desired dynamic may be specifically configured to meet the needs of the individual user (column 4, lines 35-37). Therefore, Ulrich et al. implicitly disclose the input being adapted to be programmably mapped to the output according to a user's preference. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Littlejohn et al. by combining the input being adapted to be programmably mapped to the output according to a

user's preference for customizing mechanism for a power assist vehicle such as a wheelchair in accordance with a particular user's need.

As per claim 2, Littlejohn et al. disclose a programmable processor for controlling the output in accordance with a signal from the input, and wherein the input is a switched input on a hand control module of a personal mobility vehicle (see column 1, lines 39-40; and columns 2-3, lines 39-7).

As per claims 3, and 7, Littlejohn et al. discloses the output is a power seat module (see columns 5-6, lines 56-2).

As per claim 6, Littlejohn et al. disclose a plurality of switched inputs including the at least one input (see columns 4-5, lines 58-55), and a plurality of outputs including at least one output (see column 3, line 62). Littlejohn et al. do not explicitly disclose different switched inputs are adapted to be programmably assigned to control different outputs. However, Littlejohn et al. disclose **the control signal inputs from joystick are provided to a command module 20** (column 2, lines 46-48); **command module 20** coupled to a pair of serial links 42 to **a control module 44** (column 3, lines 37-39); **control module providing digital outputs** (column 3, lines 61-62). Therefore, it would have been obvious to one of ordinary skill in the art that Littlejohn et al. implicitly disclose different switched inputs are adapted to be programmably assigned to control different outputs because the control module providing digital outputs signal in response to the control signal from inputs. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Littlejohn et al. by combining different switched inputs are adapted to be programmably assigned to control different outputs in

order for implementation difference inputs selected to be modified in accordance with a particular user's need.

As per claim 12, Littlejohn et al. disclose a programmable processor and a memory with software embedded in the memory, the software being adapted to be configured so that the processor can map the input to control the output (see column 3, lines 37-65; and column 7, lines 61-66).

As per claim 13, Littlejohn et al. disclose a software profile is created for a particular user (see columns 1-2, lines 56-24).

4. Claims 14-15, are rejected under 35 U.S.C.103(a) as being unpatentable over Wakefield, II et al. (6,819,981) in view of Rice, Jr. et al. (5,345,226).

As per claim 14, Wakefield, II et al. disclose an electronic control system for a personal mobility vehicle, the system comprising: at least one user interface object (see column 1, lines 7-34), a plurality of targets (see column 4, lines 18-36). Wakefield, II et al. do not explicitly disclose a processor that is programmable to send an action message from the user interface object to a desired one of the targets. However, Wakefield, II et al. disclose the **microcontroller is programmed** to interact with the remote controller (see column 7, lines 9-10), the microcontroller responds to the **activation of the P pushbutton** of the remote controller (column 7, lines 17-18), and a **menu display speed and response parameter in the screen image** (column 7, lines 25-27). It would have been obvious that the microcontroller responds to the activation of the P pushbutton of the remote controller, and a menu display speed and response parameter in the screen image implies a processor that is programmable to send an action message from the user interface object to a desired one of the targets, because "a menu display"

represents an action message, “the activation of the P pushbutton” represents the user interface object, and “display speed and response parameter in the screen image” represents any one of the targets. Therefore, Wakefield, II et al. implicitly disclose a processor that is programmable to send an action message from the user interface object to any of the targets. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Wakefield, II et al. by combining a processor that is programmable to send an action message from the user interface object to a desired one of the targets to display a parameter which the user select or setting to a user, and from the observation, the user may readjust the parameter setting to better suit the user’s operating capabilities.

As per claim 15, Wakefield, II et al. disclose the user interface object is a switched input (see column 1, line 25). Wakefield, II et al. do not disclose processor being programmable to cause the switched input to act as either a latched input or an unlatched input. However, Rice, Jr. et al. disclose processor being programmable to cause the switched input to act as either a latched input or an unlatched input (see column 10, lines 7-10; and columns 11-12, lines 58-10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Wakefield, II et al. by combining processor being programmable to cause the switched input to act as either a latched input or an unlatched input enable the user to select control functions from several different input states in order to set a user’s desire parameter in accordance with the operational capabilities of an individual user.

5. Claims 4-5, and 8, are rejected under 35 U.S.C.103(a) as being unpatentable over Littlejohn et al. (5,033,000), and Ulrich et al. (6,807,465) as applied to claims 2, and 6 above, and further in view of Rice, Jr. et al. (5,345,226).

As per claim 4, Littlejohn et al., and Ulrich et al. do not disclose the output is an environmental control module. However, Rice, Jr. et al. disclose the output is an environmental control module (see the abstract; and column 2, lines 1-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Littlejohn et al., and Ulrich et al. by combining the output is an environmental control module to assist the user control any device around the user which minimizes human assistance and maximizes user independence.

As per claim 5, Littlejohn et al. disclose the output is a motor control module and the processor controls a parameter of the motor control module in accordance with the signal from the switched input (see column 4, lines 27-57).

As per claim 8, Littlejohn et al. do not disclose an accessory function. However, Rice, Jr. et al. discloses the at least one output controls an accessory function (see columns 4-5, lines 41-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Littlejohn et al. by combining the at least one output controls an accessory function to provide maximum variety control functions around the user.

6. Claims 21-22, 24, 30-32, 34-35, and 38, are rejected under 35 U.S.C.103(a) as being unpatentable over Ulrich et al. (6,807,465).

As per claims 21-22, Ulrich et al. disclose a method for mapping personal mobility vehicle inputs to outputs, the method comprising: providing a personal mobility vehicle having inputs, outputs, and a programmable processor for performing operations or control functions of the outputs in response to signals from the inputs (see columns 4-5, lines 12-27), selecting a desired input (see column 5, lines 12-13). Ulrich et al. do not explicitly disclose assigning an

operation or control function to the desired input, and associating an output with the assigned operation or control function. However, Ulrich et al. disclose the control map selected by the user (see column 4, lines 21-23), a power assist vehicle senses driving torque / force applied by a user, the control map defining a desired dynamic of the vehicle (see the abstract), a CPU which utilizes a desired dynamic or control map to transform the measured torque value to a desired drive wheel velocity (column 4, lines 32-35), computing the desired wheel velocity is based on the algorithm (column 5, lines 15-16). Therefore, Ulrich et al. implicitly disclose assigning an operation or control function to the desired input, and associating an output with the assigned operation or control function. It would have been obvious to one of ordinary skill in the art that control map defining a desired dynamic of the vehicle (implies a desired input), the algorithm to compute (implies an assigned operation or control function) the desired wheel velocity (implies an output). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Ulrich et al. by combining assigning an operation or control function to the desired input, and associating an output with the assigned operation or control function to compute a vehicle control parameter associating with the user's desired to produce an appropriate vehicle control function.

As per claims 24, and 31, Ulrich et al. disclose providing a program editor, wherein the program editor is a software application, the software application is integral with the personal mobility vehicle (see column 4, lines 13-43).

As per claims 32, and 34-35, Ulrich et al. disclose software application is stored in an external device, the external device is in the form of a personal computer, the software is a user-friendly windows application software (see columns 4-6, lines 44-2).

As per claim 30, Ulrich et al. disclose providing a field, and entering an output into the field (see columns 4-5, lines 44-28).

As per claim 38, Ulrich et al. disclose an electronic control system for a wheelchair, comprising: a plurality of input device (see columns 1-2, lines 64-20), a plurality of output device (see columns 4-5, lines 24-15). Ulrich et al. do not explicitly disclose programmable to map the input devices to the desired output devices according to a user's preference. However, Ulrich et al. disclose the interface 80 is provided with a switch 90 that allows the user select between the various control maps (column 5, lines 1-3), it would have obvious to one of ordinary skill in the art that "the user select between the various control maps" implies input; and once the user selects the desired control map, the CPU is ready to compute the desired system output (column 5, lines 12-14), also, "the desired system output" implies output corresponding to the input selected by the user. Also, Ulrich et al. disclose the control system is programmed with at least one control map defining a desired dynamic of the vehicle (column 2, lines 3-5), and the desired dynamic may be specifically configured to meet the needs of the individual user (column 4, lines 35-37). Therefore, Ulrich et al. implicitly disclose programmable to map the input devices to the desired output devices according to a user's preference. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Littlejohn et al. by combining programmable to map the input devices to the desired output devices according to a user's preference for customizing mechanism for a power assist vehicle such as a wheelchair in accordance with a particular user's need.

7. Claims 23, 25, 27, 29, and 36-37, are rejected under 35 U.S.C.103(a) as being unpatentable over Ulrich et al. (6,807,465) in view of Wakefield, II (5961561).

As per claim 23, Ulrich et al. do not disclose entering a programming mode. However, Wakefield, II discloses entering a programming mode, and depressing the desired input (see column 4, lines 23-33; and columns 8-9, lines 26-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Ulrich et al. by combining entering a programming mode to control the operation of the wheel chair.

As per claim 25, Ulrich et al. do not disclose a list of inputs. However, Wakefield, II discloses a list of inputs, and selecting an input from the list (see columns 6-7, lines 57-52). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Ulrich et al. by combining a list of inputs to providing different types of tasks for the user, for enabling the user control and interact with various devices and facilities in their environment.

As per claim 27, Ulrich et al. do not disclose a list of operations or control functions. However, Wakefield, II discloses providing a list of operations or control functions, and selecting an operation or control function from the list (see column 10, lines 3-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Ulrich et al. by combining a list of operations or control functions to enable an operator to remotely or locally store or modify user's desired parameter in a control module

Also, as per claim 29, Wakefield, II discloses providing a list of outputs and selecting an output from the list (see columns 6-7, lines 57-53; and column 12, lines 14-67).

As per claims 36-37, Wakefield, II discloses the operations or control functions include action messages and parameter values, and the outputs include one or more control modules (see columns 11-12, lines 5-8).

8. Claims 26, 28, and 33, are rejected under 35 U.S.C.103(a) as being unpatentable over Ulrich et al. (6,807,465) in view of Wakefield, II et al. (6819981).

As per claim 26, Ulrich et al. do not disclose providing a field. However, Wakefield, II et al. disclose providing a field and entering an input (see columns 7-9, lines 60-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Ulrich et al. by combining providing a field allow the user select and enter a command selection.

Also, as per claim 28, Wakefield, II et al. disclose providing a field, and entering an operation or control function into the field (see columns 9-10, lines 10-12).

As per claim 33, Ulrich et al. do not disclose the external device is in the form of a handheld pendant. However, Wakefield, II et al. disclose the external device is in the form of a handheld pendant (see column 6, lines 33-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Ulrich et al. by combining the external device is in the form of a handheld pendant for remotely setting selected performance parameter based on the user's capabilities of operating the wheelchair.

9. Claims 9-11, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 16-20, are allowable.

#### **Remarks**

10. Applicant's argument filed on 1/3/06 has been fully considered. Upon updated search, the new ground of rejection has been set forth as above. There are no new reference in this rejection. However, the rejection 102 (b) are changed to 103(a) as above.

Applicant's argument on page 9, last paragraph to page 10, first paragraph, about Littlejohn fails to disclose an input is adapted to be programmably mapped to an output. However, Littlejohn et al., and Ulrich et al. implicitly disclose the input being adapted to be programmably mapped to the output according to a user's preference, as discussed in item 3 above.

Applicant's argument on page 10, second paragraph, about claim 6, upon review Littlejohn et al. reference, Littlejohn et al. implicitly disclose different switched inputs are adapted to be programmably assigned to control different outputs with the reasons as cited in item 3 above.

Claims 16-20 are allowable in this office action.

Applicant's argument on page 11, about claims 14-15, as discussed above in item 4, Wakefield, II et al. implicitly disclose a processor that is programmable to send an action message from the user interface object to any of the targets

Applicant's argument on page 12, about claims 21, and 38, Ulrich et al. implicitly disclose assigning an operation or control function to the desired input, and associating an output with the assigned operation or control function with the reasons discussed in item 6 above.

Applicant's argument on page 13, about claims 4, 8. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Littlejohn et al., and Ulrich et al. by combining Rice, Jr. et al., to disclose the output is an environmental control module to assist the user control any device around the user which minimizes human assistance and maximizes user independence as cited in item 5 above. Rice, Jr. et al. suggest this motivation in column 1, lines 42-52.

Claims 10-11 are not rejected in this office action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 571-272-6968. The examiner can normally be reached on M-F 6:30 AM-4:00 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner  
Dalena Tran



March 16, 2006